DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
2 NAVY ANNEX
WASHINGTON, DC 20380-1775

MCO 3090.1
C4I
25 Jul 95

MARINE CORPS ORDER 3090.1

From: Commandant of the Marine Corps
To: Distribution List

Subj: POLICY FOR COMMAND AND CONTROL AND COMMAND AND CONTROL SYSTEMS

Ref: (a) Joint Publication 1-02
(b) MCO 5230.1, Marine Corps Information Technology Management Responsibilities
(c) MCO P3900.15, Marine Corps Combat Development Process

1. Purpose. To promulgate policy for oversight and management of Marine Corps command and control and associated systems.

2. Background. There is a new environment within the Department of Defense being implemented through a Joint Staff initiative known as "C4I for the Warrior." It is a visionary yet practical approach to command and control, emphasizing advanced concepts, methods of employment, and principles for the development of command and control systems. Its overall goal is seamless, interoperable command and control for warfighters.

a. In the past, the Marine Corps and other services developed command and control capabilities to support unique Service and functional requirements. This resulted in "stovepiped" systems which were not well suited for joint or combined operations; moreover, they hindered operational flexibility and effectiveness and were inefficient in that they did not share scarce communication resources. Additionally, tactical information systems were acquired in a different manner than garrison systems. This resulted in disparate policies, procedures and systems among the services and within the Marine Corps. The increased emphasis on joint warfighting and the need for seamless command and control dictates the elimination of such stovepipes and mandates a new, unfragmented, approach to the subject.

b. The current objective is to integrate all aspects of command and control to include doctrine, organization, equipment, training and education, facilities and support. The hardware and software supporting command and control constitutes the Marine Air Ground Task Force Command and Control, Communications, Computers and Intelligence (MAGTF C4I) System - the Marine Corps derivative of C4I for the Warrior. It is a "system of systems" which includes intelligence, maneuver control, air operations, fire support, combat service support, force deployment, and other systems which will share common hardware and core software. MAGTF C4I will achieve interoperability with joint organizations and the other services by being integrated into the Global Command and

Control System (GCCS). GCCS is the implementation of the C4I for the Warrior concept.

c. Underpinning the shift within the Marine Corps to this integrated approach is a new fundamental Concept of Command and Control, being published as FMFMRP 14-30, which emphasizes the commander's need to function effectively in an environment of uncertainty. It highlights the importance of delegating authority and decision making through the use of broad "mission control" versus detailed "directive control" measures. Additionally, it stresses the importance of rapid decision making when faced with imperfect information through the expanded use of recognitional and intuitive techniques. The Concept encourages development of combat capabilities which support these methods and stresses the need for "knowledge based information systems" which employ advanced techniques to promote rapid visualization, recognition, and understanding of the tactical situation.

3. Definitions. Reference (a) provides the following definitions, which will be used within the Marine Corps.

a. Command and Control is "the exercise of authority and direction by a properly designated commander over assigned forces in the accomplishment of the mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission."

b. Command and Control Systems consist of "the facilities, equipment, communications, procedures, and personnel essential to a commander for planning, directing, and controlling operations of assigned forces pursuant to the missions assigned."

4. Policy

a. Oversight and Management. General responsibilities for command and control and associated systems are outlined below. See reference (b) for additional information and responsibilities related specifically to Marine Corps information technology.

(1) Commandant and Assistant Commandant of the Marine Corps

(a) The Commandant of the Marine Corps executes his responsibilities for command and control through several Headquarters Marine Corps staff directorates. In general, the Plans, Policies, and Operations Department has overall responsibility for command and control, the Aviation Department takes the lead on matters within its area of cognizance, and the C4I Department takes the lead on issues related to non-aviation command and control systems. The three departments operate in

close coordination with one another and with the Marine Corps Combat Development Command (MCCDC), Marine Corps Systems Command (MARCORSYSCOM), and external organizations.

(b) Top level decisions related to command and control resources are normally rendered by the Assistant Commandant of the Marine Corps (ACMC) through the ACMC Committee. Issues for decision are usually referred to the Committee by CG MCCDC based on recommendations of the Information Technology Steering Group (ITSG). See reference (b) for further information related to the ITSG. Command and control responsibilities of other organizations are outlined in general terms below.

(2) Headquarters Marine Corps (HQMC) Staff will:

(a) Develop overarching Marine Corps policies.

(b) Coordinate the actions of HQMC, MCCDC, and MARCORSYSCOM to ensure commonality of effort.

(c) Coordinate Marine Corps actions with those of joint and other-service organizations. Coordinate participation and representation of the Marine Corps on command and control policy boards, technical committees, panels and working groups.

(d) Ensure that initiatives and policies within respective functional areas are harmonized with and support the Concept of Command and Control.

(e) Provide input to CG MCCDC for revision of the Marine Corps Master Plan and Mission Area Analyses dealing with command and control.

(f) Coordinate with DC/S M&RA to ensure that adequate structure and manpower resources are available to fully support and implement initiatives developed under this Order.

(3) Commanding Generals of Operating Forces and Supporting Establishment will:

(a) Analyze requirements necessary to implement the Concept of Command and Control consistent with requirements of combatant commanders; submit Fleet Operational Needs Statements and other documentation as required.

(b) Ensure that locally procured information technology resources which could have impact on Marine Corps command and control are approved by the Information Technology Steering Group (ITSG). This will ensure that locally procured systems support the Concept of Command and Control and are compatible with the C4I architecture established by CG MCCDC.

(c) Ensure that appropriate staff sections have the resources necessary for administration and operation of systems serving their functional areas (e.g.; G-1 for Manpower Management System, G-2 for Intelligence Analysis System, G-3 for Tactical Combat Operations System, G-3 or G-5 for GCCS). The unit G-6 will provide technical advice and support in areas common among systems (e.g., will provide maintenance of common hardware, expertise and assistance in common operating system software, and management of "common user" communication paths). The G-6 may also serve as information integrator, merging the information systems and technologies within the unit into a single "system of systems."

(4) Commanding General, Marine Corps Combat Development Command will:

(a) Ensure that requirements definition and the overall Combat Development Process (CDP) are implemented in accordance with reference (c), applicable DoD instructions, and the principles outlined in paragraph 4.b. below.

(b) Conduct Mission Area Analyses (MAA 11 and others) using the new Concept of Command and Control as a framework. Identify and validate deficiencies in command and control.

(c) Revise the Marine Corps Master Plan (MCMP) to reflect the results of Mission Area Analyses (MAA 11 and others).

(d) Ensure that doctrine, training and education, organization, equipment, and facilities are developed in accordance with MAA’s and the MCMP.

(e) Develop and maintain baseline and target C4I architectures (i.e., detailed plans to satisfy current and future information exchange requirements) in accordance with Joint Standards.

(f) Develop and publish standards for C4I systems in accordance with Joint Standards.

(g) Augment the Inspector General’s Inspection Team for enforcement of existing standards.

(h) Organize and chair the Information Technology Steering Group (ITSG).

(5) Commander, Marine Corps Systems Command will:

(a) Ensure that systems being acquired and/or developed support the Concept of Command and Control and are integrated into the C4I architecture, to include meeting all joint interoperability requirements.

(b) Ensure that research, development and acquisition processes are consistent with reference (c) and the combat development principles outlined in paragraph 4.b. below.

(c) Acquire and develop standardized information technology systems by building on the concept of Common Hardware and Software Suites (CHS/CSS) and the C4I architecture.

(d) Maintain and continuously improve the C4I Battle Laboratory. Where practical, the Laboratory will be used to evaluate the C4I architecture and MAGTF C4I System while obtaining continuous operational user assessment.

(e) Ensure system developers and acquisition managers program for the necessary System Administrators, operators and maintainers for information technology systems.

(f) Ensure that command and control systems are integrated and evaluated prior to fielding.

b. Combat Development. The Concept of Command and Control, the need for an integrated approach, and the requirement for interoperabilty with joint force commanders and other services provide the framework for developing doctrine, training and education, organization, facilities and support, and, finally, equipment under the Combat Development Process. The following principles will be adhered to in developing the information infrastructure supporting command and control.

(1) Integration of individual systems into a coherent "system of systems" will be the goal. Therefore, compatibility of sub-systems must be coordinated during development.

(2) Systems will be designed within their environmental and human context. Operating facilities (combat operations centers, for example) will be arranged so as to optimize information flow and increase efficiency. They will be ergonomically designed to facilitate man-machine interface, will be "user-friendly" and will have the same "touch and feel" to the maximum practical extent.

(3) Systems and operating facilities will be designed to facilitate battlespace awareness and increase the speed of decision making. The ability to summarize essential information and screen out the superfluous will be stressed. Emphasis will be placed on distilling and synthesizing information into "near-knowledge" and presenting it in visual (rather than raw data or narrative) form to facilitate instant recognition and understanding.

(4) Drawing distinctions between "tactical" and "garrison" systems will be avoided. Those systems used on a daily

basis at home duty stations should be the same as those used in combat. A single integrated system and seamless information flow within the operating area and back to the supporting establishment is the goal.

(5) In making the decision to acquire or develop a command and control system, an evaluation will be made of other-service efforts to satisfy similar requirements. Where possible, the Marine Corps will attempt to capitalize on such efforts. This may mean compromising certain desired features and accepting an "80 percent solution."

(6) During evaluation of alternatives, commercial and government off-the-shelf (COTS/GOTS) solutions will be sought to satisfy system requirements. Full scale development efforts should be avoided whenever possible. New development will only be undertaken when it can be shown that an existing government or commercial solution will not satisfy the requirement.

(7) System designers and program managers will realistically assess the support requirements of new systems. It will not be assumed that units can support new systems "out of hide" with operators, maintenance personnel, prime movers, electrical power, tentage, communication security equipment or other resources. These requirements must be carefully considered in determining the optimal method for pursuing a given combat development.

(8) Modeling and simulation will be used to the maximum extent. Modeling and simulation tools and products must adhere to the same Joint Standards as the systems they support.

5. Summary. Past approaches to command and control have proven to be less than fully effective. The newly developed Concept of Command and Control and integrated "system of systems" approach outlined above incorporate needed changes which will help to provide seamless command and control within the operating area, up and down the service and joint chains of command, and back to the continental United States and the supporting establishment.

6. Reserve Applicability. This order is applicable to the Marine Corps Reserve.

D. A. RICHWINE
Assistant Chief of Staff
Command, Control, Communications,
Computer and Intelligence

DISTRIBUTION: PCN 10203117900

Copy to: 7000110 (55)
7000114/8145004, 005 (2)
8145001 (1)